



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,443	02/09/2004	Toshiro Toyoda	Q79801	3618
23373	7590	05/22/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			PANG, ROGER L	
			ART UNIT	PAPER NUMBER
			3681	

DATE MAILED: 05/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/773,443	TOYODA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Roger L. Pang	3681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-3 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-3 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All    b) Some \* c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8-6-04.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_.

## DETAILED ACTION

The following action is in response to application 10/773,443 filed on February 9, 2004.

### *Drawings*

The drawings were received on August 16, 2004. These drawings are approved.

### *Claim Objections*

Claim 2 is objected to because of the following informalities: on line 3, “than” should be deleted. Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haka ‘966 in view of Nakano ‘322, and in further view of Miyata ‘588. With regard to claim 1, Haka teaches a continuously variable transmission apparatus coupled to a drive source 12 comprising: an input shaft 42 rotatably driven by the drive source; an output shaft 80 for extracting power derived from rotation of the input shaft; and a toroidal-type continuously variable transmission 16 and a planetary gear mechanism 22 disposed between the input shaft and the output shaft, wherein the toroidal-type continuously variable transmission has: a pair of input side disks 30/32, each having inner and outer side surfaces and rotating together with the input shaft; an output side disk 34/36 having side surfaces, the side surface being disposed concentrically with the

respective input side disks around an intermediate section of the input shaft and being opposite to the inner side surfaces of the respective input side disks, and the output side disk being rotatable independently of the input side disks; a power roller 38/40 interposed between the input side disk and the output side disk; and the planetary gear mechanism has: a sun gear 46; a ring gear 48 disposed around the sun gear; a carrier 60 supported concentrically with the sun gear and supported on one end section of the input shaft; and a planetary gear 58 interposed between the sun gear and the ring gear. Haka lacks the specific teaching of the power roller structure between the input and output disks. Nakano teaches a continuously variable transmission comprising of input and output disks 26/32 and 28/34; a trunnion 83 interposed between the input side disk and the output side disk and swinging around an axle twisted with respect to center axles of the disks; a support shaft (Fig. 2) protruding from an inner side surface of the trunnion; and a power roller 30/30' interposed between the input side disk and the output side disk while being rotatably supported by the support shaft (Fig. 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Haka to employ the trunnion and support shaft traction roller control structure in view of Nakano in order to minimize vibration of roller support members (Col. 1). Haka teaches that carrier 60 is connected for common rotation with the input disk 32, but lacks the specific teaching of the connection. Miyata teaches of an input disk 2B, wherein a plurality of projections 92 are projected from a portion of the outer side surface of the one input side disk and provided at positions closer to the outside diameter than to the diameter of a pitch circle of a traction section, the traction section being a rolling contact section between the inner side surface of the input side disk and a circumferential surface of the power roller and

located areas close to the outermost diameter of an inside surface of the input side disk (Col. 19), and a plurality of engagement sections 96 formed in a part of a planetary component, and transmission of power between the planetary component and the one input side disk is carried out by coupling the plurality of projections with the plurality of engagement sections. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Haka to employ input side disk projections and carrier projections in view of Miyata, in order to promote a greater torque transmission (Col. 12) and facilitate easier assembly. With regard to claim 2, Miyata teaches the apparatus, wherein the plurality of projections are provided radially outside a circumscribed circle of a contact oval existing in the traction section (Col. 19). With regard to claim 3, Haka teaches the apparatus wherein the continuously variable transmission apparatus achieves the state of an infinite transmission ratio by stopping the output shaft while the input shaft is rotated (with clutch 26 released).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Elser, Inoue, Lohr, Ishikawa and Wooden have been cited to show similar CVTs.

### **FACSIMILE TRANSMISSION**

Submission of your response by facsimile transmission is encouraged. The central facsimile number is (571) 273-8300. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing

Art Unit: 3681

and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of correspondence not permitted by facsimile transmission, see MPEP 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check should not be submitting by facsimile transmission separately from the check.

Responses submitted by facsimile transmission should include a Certificate of Transmission (MPEP 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (571) 273-8300) on \_\_\_\_\_ (Date)

Typed or printed name of person signing this certificate:

---

---

(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MPEP 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your

Art Unit: 3681

response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roger L. Pang whose telephone number is 571-272-7096. The examiner can normally be reached on 5:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Roger L Pang  
Primary Examiner  
Art Unit 3681

May 18, 2006